

REMARKS

Claims 1-65 have been cancelled as noted in the Preliminary Amendment filed February 17, 2004. Claims 66-86 are pending in the present application. In the Office Action dated September 8, 2004 the Examiner rejected claims 66, 68, 70 and 74-78 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,888,208 (Maeda et al.). Claim 72 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. Claims 66 and 67 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,413,061 (Kumar et al.) in view of Maeda et al.

Reconsideration of the invention is respectfully requested in view of the present amendments and remarks.

Objections to the Claims As an initial matter, the present amendment to all the claims recites "An article" rather than "A composition" as recommended by the Examiner. The Examiner objected to the preamble because the claimed composition includes a layer. On this basis, the Examiner recommended reciting "An article" rather than "A composition" in the preamble. Applicant complies with the Examiner's recommendation with the understanding that the claimed article can equally be considered a composition at least for a temporary period of time, *e.g.*, when the article is treated with sulfur trioxide during the preparation of a semiconductor a composition exists as a layer of a metal oxide in contact with the sulfur trioxide.

Rejections over the Cited Art All of the claims of the present invention are based on claim 66, which recites a specific Markush group of metal oxide layers in combination with sulfur trioxide. The present amendment cancels all the species of metal oxide layers that are mentioned in the prior art cited by the Examiner.

More specifically, Maeda et al. only discloses metal oxide layers of the species Zirconia (ZrO_2), Titania (TiO_2), Magnesia (MgO) and Beryllia (BeO). Each of these species have been cancelled from the base claim 66. The remaining minerals recited by Maeda are not metal oxides or were not originally recited in the Markush group of claim 66. Accordingly, there is no motivation that can be gleaned from Maeda to use the particular species now recited in claim 66, hence claims 66 and 67 are novel and non-obvious over Maeda. Withdrawal of the

rejection of the base claim and claim 72 as anticipated or obvious over Maeda is therefore respectfully requested.

Kumar was cited for teaching a sintered glass ceramic substrate comprising circuit patterns of highly conductive metals where the ceramic contains Li_2O_3 and Na_2O_3 . Applicant points out that these species are not recited in the Markush group of claim 66 and therefore are not “alkaline metal oxides within the group” as recited in claim 67. Withdrawal of the rejection of claims 66 and 67 as obvious over Maeda and Kumar is therefore respectfully requested.

Kwon was cited for teaching a dielectric constant capacitor for DRAMS comprising a conductive base film such as tungsten and a metal oxide film. Claim 66 of the present invention is directed to metal oxides in contact with sulfur trioxide, which the Examiner recognizes is not taught by Kwon. However, the Examiner relies on the combination with Maeda based on the statement that “...it would have been obvious to a person of one of ordinary skill in the art at the time of the invention to expose the ceramic layers of the Kwon capacitor to sulfur trioxide because it would allow for better adhesion between circuitry layers and the ceramics.” Applicant notes to the Examiner, that Kwon specifically teaches that metal oxides are deposited on tantulum oxide, which is another metal oxide and not a metal. As the Examiner recognizes, Maeda as a whole discloses using sulfur trioxide to roughen a ceramic for “allowing firm adhesion between metal circuit patterns and the ceramic layers.” This is clear from column 5, lines 5-12, which mentions the “wet platings” that are to be deposited on the roughened metal oxide layer. All of the wet platings disclosed by Maeda are metals, not metal oxides. There is no teaching in Maeda or Kwon that a metal oxide should be exposed to sulfur trioxide to adhere the metal oxide layer to another metal oxide such as tantulum oxide to form the double type of metal oxide layer taught by Kwon.

In any case, to facilitate prosecution of certain embodiments of the invention, the particular species of metal oxides mentioned by Kwon for adhering tantulum oxide to a metal oxide are herein cancelled from amended claim 66. The metal oxide species mentioned by Kwon that are cancelled from claim 66 are (in order listed by Kwon at col. 3, lines 5-7) TiO_2 , SnO_2 , ZrO_2 , HfO_2 , Cr_2O_3 , Y_2O_3 , BaO , Bi_2O_3 , SnO , SrO , MnO , and MgO . Kwon mentions other species such as WO_2 , Al_2O_2 , Cr_2O_3 , La_2O_3 , Th_2O_3 , PbO , and CaO that were not recited in original claim 66. Accordingly, the presently recited Markush group of species cannot be

derived from the combined teachings of Maeda and Kwon. Withdrawal of the rejection of claims 66, 68-70 and 74-77 as obvious over Maeda and Kwon is therefore respectfully requested.

Double Patenting The Examiner provisionally rejected claims 66-86 on grounds of non-statutory double patenting over co-pending application 10/158,650. A terminal disclaimer over co-pending application 10/158,650 is submitted herewith, which obviates this ground of rejection.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

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